

The invention claimed is:

1. An optical receiver module, comprising:
 - a silicon wafer defining opposed first and second surfaces and having a transverse opening through said silicon wafer, said opening having at least two generally planar surfaces which intersect to form a V-shaped registration corner;
 - an optical detector secured to said first surface of said silicon wafer adjacent and in alignment with said opening;
 - an optical fiber having an end positioned within said transverse opening, said optical fiber having an outer surface in contact with said generally planar surfaces to position said end portion of said optical fiber within said opening;
 - a fiber holder including a pair of silicon chips, each having a V-groove, said optical fiber positioned in said V-grooves and sandwiched between said silicon chips, said silicon chips secured to said silicon wafer to retain said optical fiber with respect to said wafer.
2. The optical receiver module of claim 1, wherein:
 - said opening is generally diamond shaped.
3. The optical receiver module of claim 2, wherein:
 - said opening forms four corners, two of said corners forming angles of about 70.5 degrees, and two of said corners forming angles of about 109.5 degrees.
4. The optical receiver module of claim 1, wherein:
 - said silicon wafer includes an electrically conductive material disposed on said first surface operably connected with said optical detector.
5. The optical receiver module of claim 1, wherein:
 - said silicon wafer includes pedestals extending from said first surface, said optical detector contacting said pedestals to thereby position said optical detector.

6. The optical receiver module of claim 1, wherein:
said silicon chips of said fiber holder are secured to said silicon wafer by solder.
7. An optical device, comprising:
a wafer defining opposed first and second surfaces and having a transverse opening through said wafer, said opening having at least one registration surface;
an optical device secured to said first surface of said wafer adjacent said opening;
an optical fiber having an end positioned within said transverse opening, said optical fiber having an outer surface in contact with said registration surface to position said end of said optical fiber within said opening.
8. The optical device of claim 7, wherein:
said wafer is made of a silicon material.
9. The optical device of claim 7, including:
a fiber holder having a groove that receives said optical fiber, said fiber holder secured to said wafer.
10. The optical device of claim 7, including:
a fiber holder having a pair of silicon chips, each having a V-groove, said optical fiber positioned in said V-grooves and sandwiched between said silicon chips, said silicon chips secured to said silicon wafer.
11. The optical device of claim 8, wherein:
said silicon material defines a [112] crystal orientation, said opening having a side surface aligned with said [112] crystal orientation.
12. The optical device of claim 11, wherein:
said opening is diamond shaped.

13. The optical device of claim 12, wherein:
said silicon wafer has a conductive material disposed on said first surface that is electrically connected to said optical detector.
14. The optical device of claim 13, wherein:
said optical device comprises an optical detector capable of operation at at least about ten giga bytes per second.
15. A method of fabricating an optical receiver module, comprising:
providing a wafer having first and second sides and an opening therethrough;
securing an optical receiver to said first side of said wafer;
positioning an end of a optical fiber in said opening in optical communication with said optical receiver such that at least a portion of a light signal traveling along said fiber optical fiber will strike said optical receiver.
16. The method of claim 15, including:
providing a fiber holder having a groove;
positioning said fiber optic line in said groove; and
securing said holder to said second side of said wafer.
17. The method of claim 16, wherein:
said wafer is fabricated from silicon; and
said opening has a diamond shape.
18. The method of claim 17, wherein:
said fiber optic line contacts at least two sidewalls of said opening to locate said fiber optic line.
19. The method of claim 19, wherein:
a sidewall of said opening is aligned with a [112] crystal orientation of said wafer.

20. The method of claim 19, wherein:
said opening is formed by anisotropic etching.